

ARISTOTLE AND THE SCIENCES
International Virtual Conference Celebrating the 10th Anniversary
of the
Interdisciplinary Centre for Aristotle Studies,
Aristotle University of Thessaloniki

ABSTRACTS

Προκόπιος Παυλόπουλος

Παρατηρήσεις για την επικαιρότητα της θεωρίας του Αριστοτέλους περί Επιείκειας στο πεδίο του σύγχρονου Δημόσιου Διεθνούς Δικαίου

Η Νομική Επιστήμη, ως μέρος των Θεωρητικών Επιστημών, οφείλει πολλά στην θεωρητική αναζήτηση του Αριστοτέλους. Ιδίως τα *Ηθικά Νικομάχεια*, η *Ρητορική* και η *Αθηναίων Πολιτεία* εμπεριέχουν αναλύσεις, εξαιρετικά χρήσιμες ως σήμερα, οι οποίες μέσ' από την θεωρητική, και με καθαρώς επιστημονική μεθοδολογία, προσέγγιση κυρίως του Δικαίου και της Δικαιοσύνης καταδεικνύουν μ' ενάργεια την πολυπρισματική και ουσιαστική «οφειλή» της σύγχρονης Νομικής Επιστήμης στο έργο του Αριστοτέλους. Ένα μικρό μέρος της «οφειλής» αυτής επιχειρεί να φέρει στο φως η ανάλυση που ακολουθεί, μ' επίκεντρο την έννοια της Επιείκειας, ως θεμελιώδους ρήτρας ερμηνείας και εφαρμογής του Δικαίου, στο σύνολό του. Με την αναγκαία διευκρίνιση, ότι επειδή η πλήρης περιγραφή και επεξήγηση ακόμη και αυτού του επιμέρους αντικειμένου της φιλοσοφικονομικής σκέψης του Αριστοτέλους θα υπερέβαινε, κατά πολύ, τα όρια μιας τέτοιας ανάλυσης, η κατ' Αριστοτέλη έννοια της Επιείκειας ερευνάται, πέραν των γενικών γραμμών της πεμπτουσίας της, σχεδόν αποκλειστικώς στο πεδίο του σύγχρονου Δημόσιου Διεθνούς Δικαίου. Και ακόμη πιο συγκεκριμένα, στο ειδικότερο εκείνο πεδίο του που αφορά το Διεθνές Δίκαιο της Θάλασσας του ΟΗΕ, κατά την Σύμβαση του Montego Bay του 1982. Την προαναφερόμενη επιλογή δικαιολογεί το ότι εντός του πεδίου του Διεθνούς Δικαίου της Θάλασσας του ΟΗΕ, ακριβώς λόγω της εγγενούς γενικότητάς του ή και ασάφειάς του -η οποία σε αρκετές περιπτώσεις ήταν επιλογή των συντακτών των κανόνων του, προκειμένου να καλύψουν τις, μοιραίως συχνά ανατιθέμενες, θέσεις των συμβαλλόμενων μερών σε παγκόσμιο επίπεδο, πρωτίστως λόγω της πολυπλοκότητας του ρυθμιστικού αντικειμένου των κανόνων τούτων- η ρήτρα της Επιείκειας έχει βρει ένα «προνομιακό», κυριολεκτικώς, πεδίο ερμηνευτικής, και όχι μόνον, επιρροής.

Christof Rapp

Does Aristotle's Biology Unduly Rely on Philosophical Prejudices? Examples from the *Parva Natura*, *De Motu Animalium* and *De Generatione Animalium*

Aristotle's biological research combines sober observations with philosophical hypotheses. This is the one of the reasons why his approach to empirical sciences has often come under attack – not only in Early Modern Philosophy, but down to the 20th century. This suspicion is famously echoed in Popper's "Every discipline which still uses the Aristotelian method of definition has remained arrested in a state

of empty verbiage and barren scholasticism” or in Medawars’ “The biological works of Aristotle are a strange and generally speaking rather tiresome farrago of hearsay, imperfect observation, wishful thinking, and credulity amounting to downright gullibility”. In my presentation I will try to disentangle several strands of this kind of criticism and will use examples from Aristotle’s biological works in order to assess Aristotle’s fusion of empirical research with genuinely philosophical methods.

Χρήστος Ζερεφός

Τα «Μετεωρολογικά» του Αριστοτέλους

Ο Αριστοτέλης είναι ο πρώτος ο οποίος έγραψε Πραγματεία με τίτλο «Μετεωρολογικά», περιγράφοντας μετεωρολογικά φαινόμενα γνωστά στην εποχή του. Στα *Μετεωρολογικά*, ο Αριστοτέλης διαπραγματεύεται πολλά θέματα, μεταξύ αυτών και εκείνο της κλιματικής αλλαγής, το οποίο παρουσιάζει ιδιαίτερο ενδιαφέρον διότι δίνονται παραδείγματα κλιματικών αλλαγών στην περιοχή της ανατολικής Μεσογείου. Στο ίδιο βιβλίο, μεταξύ άλλων, γίνεται ο διαχωρισμός των κλιμάτων της Γης καθώς και πολλά άλλα ενδιαφέροντα θέματα της φυσικής της ατμόσφαιρας και της κλιματολογίας.

Theodosios P. Tassios

Aristoteles on Mechanics and Technology. Aristotle's favourable attitude towards Technology

Against some opposing opinions, this lecture will present the view that empiricist Aristoteles was very much in favour of Technology. It will also share the conclusions of recent research in favour of *Mechanika* being a genuine work by Aristoteles. A short analysis of this work’s introduction will demonstrate an attitude as friendly to Technology as the well-known technophile Utopia expressed by Aristoteles in his *Politika* (1253b, 34). Subsequently, several passages of *Mechanika* are discussed, showing the completeness of mechanical artefacts available during the classical period, as well as Aristoteles’ special inclination for describing and explaining their function. Similar examples of aristotelian technophilia are presented regarding the manufacturing of several materials (*Meteorologica*, Book 4). Aristoteles would appear to be closer to Plato’s views regarding the importance of technicians,

Nikolaos Paraskevopoulos

Law, Equity, Science

Presocratic philosophers and orators had already introduced the concept of equity into the cultural environment of Athenian Democracy. Aristotle first discussed the relationship between Justice and Equity in his works *Nicomachean Ethics* (primarily), *Rhetoric*, and *Magna Moralia*, implying that the latter concept has a corrective function. According to it, laws generalizing previously known cases are rigid. The notion of Equity was developed to handle unusual occurrences by adjusting legal texts and principles to meet real-world circumstances. This well-known Aristotelian concept is not regarded as a

deviation from Justice or an aliud, but rather as a better sample within it (“βέλτιον δίκαιον»). This rectifying function, I believe, could not be conceived without a logical acceptance of a preexisting empirical world, claiming the rule’s fit to the real circumstances. Such primacy of the real world appears to be consistent with the famous Aristotelian idea (in *Politics* 1253a7, “πολιτικόν ο άνθρωπος ζῶον») that the human is a political being in nature, even prior to any evaluation by a social contract. As “eikos” (epi-eikeia) infers “visible”, an etymological approach helps us subscribe to the primacy of the empirical reality. Given this acknowledgement, the concept of Equity becomes most familiar to descriptive-realistic legal methodologies, leaving less of a footprint on their normative counterparts. As a result, the concept is well known and widely used within the Anglo-American tradition of Common (-Case) Law. On the contrary it is less effective or totally unfamiliar in the legal tradition of Continental Europe (strict law). The above hypothesis on the logic priority of reality raises some contemporary epistemological issues. Could the concept of Equity also be applied to the collection, processing, and production of knowledge and decisions, in a digital data system? Could this happen in such a system where the elaborated matter is -despite the word- numerical rather than material? There is also the issue of relating a corrective concept, such as Equity, to a system that denies explainability and leaves rational reasoning outside black boxes. Though examined to some extent, these questions will remain here unanswered.

Richard McKirahan

Aristotle and the Invention of Science

In this paper I propose that Aristotle originated the conception of science as a discipline — a conception that is still with us. Long before Aristotle people had held views on matters we consider scientific. Most of the sixth- and fifth-century thinkers known as Presocratics advanced theories about scientific subjects, such as eclipses of the sun and the basic materials from which all things are composed. But as far as we can tell they simply asserted that things are so, without systematically justifying their assertions or showing that or how their views were superior to others. The little information we have does not suggest that they had any particular method for arriving at their theories about the world around us or any particular method for justifying or defending them. To a large extent this is true of Plato as well. In addition, the earlier thinkers did not distinguish among different areas of inquiry as we consider physics, biology, and chemistry to be different sciences. But although these sciences are different they share some common features. Here are a few which I believe are (roughly speaking) broadly true of (many or most) of today’s sciences. Each has a (more or less) well defined subject matter. Each science has a number of sub-sciences (molecular biology, nuclear physics). Each science has its distinctive methods of inquiry and standards for what counts as evidence for its claims. Each science gives reasons, explanations, arguments or proofs of the claims it makes about its subject matter. Each science has a community of experts that agree (more or less closely) about what facts are relevant to inquiry in their subject, how to get the facts and what kinds of justification are acceptable. In all these areas Aristotle made decisive advances which remain fundamental ingredients of modern science. He distinguished one science from another by its subject matter, thus separating the science of nature from mathematics and more narrowly different branches of mathematics from one another: number theory, plane geometry, solid geometry, and in addition optics and harmonics, perhaps in some cases originating these names. He also developed a method of discovering facts in these sciences and justifying them by systematically relating them to one another so as to demonstrate that they are true.

Pantelis Golitsis

The *Metaphysics* and Aristotle's appeal to astronomy

Although Aristotle's *Metaphysics* received much attention in the nineteenth and the twentieth centuries, scholars and historians of science were not particularly interested in clarifying the aim of Aristotle's appeal to astronomy in Λ 8. Read with monotheistic prejudices, this chapter was quickly abandoned by Aristotelian scholars as a gratuitous insertion, which downgrades Aristotle's God for the sake of some supplementary principles, whose existence was dictated by celestial mechanics. In this paper, I will argue that Aristotle purposefully turned to astronomy as the only mathematical science whose objects were correlative to the immaterial first substances or gods, the number of which had to be precisely determined by his own project of first philosophy.

Lambros Couloubaritsis

The Concept of logos in Aristotle's works

Aristotle's use of λόγος completes the first stage of greek philosophy since the archaic world, before the stoic philosophy. In the archaic world, the logos is expressed by the expression κατα-λέγω, whereas μῦθος means a speech which produces effects, meaning which we find again in Aristotle's *Poetics*. In fact, Aristotle's originality lies in the separation between « things said » (τὰ λεγόμενα) and the structure « subject » and « attribute » (κατηγορούμενα) which form a technical or apophantic language. Τὰ λεγόμενα are divided between dialogue, dialectic, rhetoric, mythical speech, tragedy on the one side ..., whereas, on the other side, the apophantic language allows the establishment of scientific language. Now, in science (physics and biology), the notion of logos is also used to express, in living beings, that which assembles, thanks to the expressions ἡ μορφή καὶ τὸ εἶδος τὸ κατὰ τὸν λόγον and ὁ λόγος τῆς μίξεως. Between these different uses we can place the analysis of ορθός λόγος in practical philosophy where reason stands out. Thus, the polysemy of the concept of λόγος is confirmed.

James Lennox

Aristotelian ζήτησις as norm-governed curiosity

Aristotle's opens his search for the science of Wisdom or First Philosophy with this well-known sentence: "All human being by nature desire to know". It is very common in contemporary discussions of curiosity to identify a kind of curiosity peculiar to humans as "epistemic" curiosity and to define it as an 'intrinsic' drive for knowledge, driven by a desire to fill an 'epistemic gap'. In contemporary terms, that first sentence of the *Metaphysics* is about human curiosity. In this brief contribution to our celebration of the 10th anniversary of the Interdisciplinary Centre for Aristotelian Studies, I would like to sketch one guiding thread of my recent book, *Aristotle on Inquiry*: that Aristotle sees the *successful* pursuit of knowledge as critically dependent on [a] the *kinds* of questions that are asked, [b] the *order* in which they are asked, and [c] their suitability to the domain of inquiry. This implies that scientific inquiry must be a *norm-governed* form of curiosity.